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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER LIN, SHEW FEN	
			ART UNIT 2166	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/721,869	Applicant(s) CONRAD ET AL.	
	Examiner Shew-Fen Lin	Art Unit 2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 17 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-10, 13, 17 and 19-25 is/are rejected.
- 7) ☒ Claim(s) 11-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/30/07, 10/31/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- a. This action is taken to response to amendments and remarks filed on 8/30/2007.
- b. Claims 1-13, 17, and 19-25 are pending in this Office Action and claims 23-25 are added. Claims 1, and 23-25 are independent claims.
- c. In view of the amendments, submitted on 8/30/2007, Examiner hereby withdraws the rejection/objections that were given in the previous Office Action.

Specification

Amendment made to the specification is acknowledged and recorded.

Claim Objections

Claims 11 and 12 are objected to because of the following informalities:

Claim 11 recites the limitation "changing, during the one or more data object processing operations, the data stored in the second data field to the second state". It should be "the fifth data field", if it is referred to the second electronic data element.

Claim 12 recites the limitation "the third data field". There is insufficient antecedent basis for the limitation in the claim. Actually, "third data field" is not defined in any claims that claim 12 are dependent upon. In addition, claim 12 recites the limitation, "changing, in response to determining that the third data field indicates that the first data field contains the default identifier, from the default identifier to an identifier value other than the default identifier" renders the claim indefinite. It is unclear what "identifier value" is changed, examiner does not believe that identifier value refers to the identifier (ID) itself but it could be the value of "state of

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the identifier”(i.e. second data field or fifth data field) or the value of “default flag” (i.e. third data field or sixth data field). Clarification is required.

Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 23-25 are provisionally rejected under the judicially created doctrine obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. **10/721,898**. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are substantially similar in scope and they use the same limitations. Claim 1 of the instant application also includes additional elements that are not recited in ‘898 reference. For example, "setting a shared lock on the electronic data element after the state of the identifier has been set to the first state," "setting an exclusive lock on the

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electronic data element after changing the state of the identifier to the third state.” It would have been obvious to a person of ordinary skill in the art at the time the invention was made to omit the additional elements such shared lock, exclusive lock of claim 1 to arrive at the claim1 of the ‘898 reference because the person would have realized that the remaining element would perform the same functions as before. “Omission of element and its function in combination is obvious expedient if the remaining elements perform same functions as before.” See In re Karlson (CCPA) 136 USPQ, decide Jan 16, 1963, Appl. No. 6857, U. S. Court of Customs and Patent Appeals. In this case, the first state, “in which said electronic data element is accessible by one or more data object processing operations...”, and the third state, “in which said electronic data element is not accessible by one or more data object processing operations...” carry the similar limitation as shared lock and exclusive lock. Therefore, instant application is not patentably distinct from ‘898 reference. Claims 23-25 recite the similar limitations as claim 1 and are rejected under the same rational.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 23-25 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, and 4 of U.S. Patent No. **7,225,302**. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are substantially similar in scope and they use the same limitations.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-10, 13, 17, 19-20, and 23-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Jamil et al. (US patent Application Publication 2003/0233523, hereinafter Jamil).

As to claims 1, 23-25, Jamil discloses a system with methods /means / system of replicating data objects from a source system to a target system [figure 6 shows copying data object 646 from a source system (processor 604) to a target system (processor 608)], the method comprising:

creating an electronic data element having a first data field containing data representing an identifier functioning as a link to one or more data objects [figure 4, 490; figure 7, 790; figure 9a~9d, 990 all show the data element comprising Data, Status and P fields; the Data field is the corresponding identifier field]; and a second data field containing data representing a state of the identifier [figure 4, 490; figure 7, 790; figure 9a~9d, 990 all show the data element comprising Data, Status and P fields; the Status field is the corresponding state of the identifier], wherein the state of the identifier is set to one of the following states:

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a) a first state [the shared state, S], in which said electronic data element is accessible by one or more data object processing operations [according to the M (modified), E (exclusives), S (shared) and I (invalid) protocol for maintaining coherency (paragraph 0032)] and whereby said identifier is assignable to one or more data objects [figure 4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment; The corresponding “one or more data objects” are the storage elements shown in figure 4, 410~480, figure 7, 710~720 and figure 9, 910~980.],

b) a second state [the exclusive dirty (ED) state], in which said electronic data element is not accessible by one or more data object processing operations [paragraphs 0035-0040] and whereby said identifier is assignable to one or more data objects [figure 4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment; The corresponding “one or more data objects” are the storage elements shown in figure 4, 410~480, figure 7, 710~720 and figure 9, 910~980], and

c) a third state [the modified (M) state], in which said electronic data element is not accessible by one or more data object processing operations [paragraphs 0035-0040] and whereby said identifier is not assignable to one or more data objects [figure 4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment; The corresponding “one or more data objects” are the storage elements shown in figure 4, 410~480, figure 7, 710~720 and figure 9, 910~980].

setting the state of the identifier to the first state [if no data portion copies reside in a private storage other than the requesting private storage. It may be assigned a new status of S according to transition 335 (paragraph 0038)];

setting a shared lock on the electronic data element after the state of the identifier has been set to the first state [a data portion having an initial status of S may be reassigned a status of

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S according to transition 355 if the data request from private storage is not a request for ownership with a right to modify the data portion, (paragraph 0038)];

assigning the identifier to one or more data objects stored in a memory of the source system [figure 4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment];

processing, by one or more data object processing operations, the one or more data objects assigned to the identifier while the identifier is set to the first state [paragraph 0038, process data in private storage for status of S, i.e. first state];

storing, after processing the one or more data objects, the one or more processed data objects to the memory of the source system [modified copy 646 is received by shared storage 690, data portion 697 is updated and reassigned a status of M (paragraph 0054)];

removing the shared lock from the electronic data element after the one or more processed data objects have been committed to storage in the memory of the source system [if a data portion is written back to shared storage, committed, from private storage, an initial status of ED may be assigned a new status of M according to transition 321, i.e. remove shared lock, (paragraph 0039)];

changing, after removing the shared lock from the electronic data element, the state of the identifier to the third state [modified copy 646 is received by shared storage 690, data portion 697 is updated and reassigned a status of M (paragraph 0054)];

setting an exclusive lock on the electronic data element after changing the state of the identifier to the third state [figure 4 shows that the state of identifier 414 is set to be “M,” which means that identifier 414 is not assignable to, and not accessible by, one or more data

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objects associated with storage elements (410, ..., 480) other than one particular data object exclusively (paragraphs 0035-0040)];

replicating, after setting the exclusive lock on the electronic data element, the one or more processed data objects from the memory in the source system to a memory in the target system [figure 6 shows that, when the status changes from ED to M, data object 646 is copied from a source system (processor 604) to a target system (processor 608); But if processor 202 has modified data portion 218, then a data request should be sent from shared storage 290, to private storage 220 for an updated copy of data portion 218, with which to satisfy the data request of processor 201 (paragraph 0034)]; and

removing the exclusive lock from the electronic data element after replicating the one or more processed data objects from the source system to the targets system [the data portion may be written back to central storage or main memory and a new status of EC or S may be reassigned to the data portion (paragraph 0051)].

As to claim 2, Jamil discloses the method of claim 1, wherein the first data field and the second data field are located in a table [figure 4, 409].

As to claim 3, Jamil discloses the method of claim 1, wherein the first data field is a data field in a first table and the second data field is a data field in a second table [figure 7, 790, 791].

As to claim 5, Jamil discloses the method of claim 1, wherein the electronic data element further comprises a third data field containing data functioning as a flag representative of

whether the first data field in the electronic data element contains a default identifier [figure 4, “P” field , paragraph (0037)].

As to claim 6, Jamil discloses the method of claim 1, wherein during a data processing operation data stored in the second field is changed from the first state to the second state [figure 4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment, paragraph 0027-0028].

As to claim 7, Jamil discloses the method of claim 1, wherein during the data object processing operation the identifier stored in the first data field is assigned to a plurality of data objects stored in the memory of the source system [figure 4, 490; figure 7, 790; figure 9a~9d, 990 show the assignment].

As to claim 8, Jamil discloses the method of claim 1, wherein the identifier state stored in the second data field is changed from one of the first and second states to the third state after the one or more assigned data objects are committed [modified copy 646 is received by shared storage 690, data portion 697 is updated and reassigned a status of M (the modified state, i.e. third state, (paragraph 0054)].

As to claim 9, Jamil discloses the method of claim 1, further comprising:
creating a second electronic data element [figure 4, paragraph 0042-0048, figure 4 illustrates a scalable presence encoding to be held in a presence portion of storage, such as 411, 412..] having:

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a fourth data field containing data representing an identifier functioning as a link to one or more data objects[figure 4, 490; figure 7, 790; figure 9a~9d, 990 all show the data element comprising Data, Status and P fields; the Data field is the corresponding identifier field], and

a fifth data field containing data representing a state of the identifier stored in the fourth data field, wherein the state of the identifier stored in the fifth data field is set to one of the first, second, and third states[figure 4, 490; figure 7, 790; figure 9a~9d, 990 all show the data element comprising Data, Status and P fields; the Status field is the corresponding state of the identifier, for the first, second, and third states, see claim 1 for detail].

As to claim 10, Jamil discloses the method of claim 9, wherein the second electronic data element further comprises a sixth data field containing data functioning as a flag representative of whether the fourth data field in the second electronic data element contains a default identifier [figure 4, “P” field, figure 4, 416, prior to a data request a data portion may be given a default status of I with a flag of “0000” (paragraph 0037)].

As to claim 13, Jamil discloses the method of claim 1, further comprising:
preventing the state of the identifier stored in the second data field from being changed to the third state_ while the shared lock is set on the electronic data element [status of ED, the second state, can not be changed until the receipt of an updated copy, a new status encoding of M, the third state, may be reassigned to the data portion (paragraph 0051)].

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As to claim 17, Jamil discloses the method of claim 1, wherein the electronic data element is shared locked prior to assignment of the identifier to the data object [a data portion having an initial status of S may be reassigned a status of S according to transition 355 if the data request from private storage is not a request for ownership with a right to modify the data portion, (paragraph 0038)].

As to claim 19, Jamil discloses the method of claim 1, wherein at least one of the data object processing operation examines, the state of the shared lock prior to assignment of the identifier to the one or more data objects [paragraph 0027-0028].

As to claim 20, Jamil discloses the method of claim 1, wherein the source and target systems are subsystems within the same computer system [figures 1, 13a/b, paragraph 0031,0087, computing system 1302 including a coherent storage hierarchy comprising private storage 1310, 1320, . . . 1340 and shared storage 1390 having storage control 1391 that supports resolving sharing ambiguities].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jamil as applied to claim 1 above, and further in view of Cuthbert et al. (US Patent 5,522,077, hereinafter Cuthbert).

As to claims 4 and 21-22, Jamil discloses the elements of claim 1 as noted above but does not explicitly disclose wherein the electronic data element is implemented in object orientated programming as an instance of a class, wherein the identifier of the first data field comprises a globally unique identifier or a time stamp.

However, Cuthbert discloses generating globally unique identifiers for objects in a distributed object oriented database [column 2, lines 23-29] and object identifier can also be formed by concatenating a processor identifier with a date -time stamp. Since each processor on the network has a unique identifier (for the purpose of network communication) and since the date -time stamp is monotonically increasing, each identifier created is guaranteed to be unique [column 1, lines 41-54].

It would have been obvious to one with ordinary skill in the art at the time of the invention to combine Jamil and Cuthbert because both references are related to accessing shared data, and by including a globally unique identifier or a time stamp as disclosed in Cuthbert, the globally unique identifier or the time stamp can be more efficient to identify objects which the requesting client process is accessing [column 2, lines 30-37]. It is for this reason that one of ordinary skill in the art would have been motivated to include either a globally unique identifier or a time stamp as identifier.

Allowable Subject Matter

Claims 11-12 would be allowable if rewritten to overcome the double patent rejection(s) and objections, set forth in this Office Action and to include all of the limitations of the base claim and any intervening claims.

Response to Amendment and Remarks

Applicant's arguments based on newly amended features with respect to claims 1 and 23-25 have been fully and carefully considered but are moot in view of the new ground(s) of rejection. Refer to the corresponding sections of the claim analysis for details.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shew-Fen Lin whose telephone number is 571-272-2672. The examiner can normally be reached on 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

November 7, 2007

Shew-Fen Lin
Patent Examiner
Art Unit 2166


HOSAIN ALAM
SUPERVISORY PATENT EXAMINER